

Raymarine®

AUTOPILOTS

Autopilot System Guide



Smart Pilot

Introduction

From the invention of Autohelm® tiller pilot almost 30 years ago to SmartPilot® gyro enhanced Advanced Steering Technology™ today, Raymarine autopilots lead the way in autopilot technology and innovation and set a new benchmark in autopilot performance and reliability.

Tiller Pilots

Raymarine tiller pilots set the standard for performance, reliability and ease of use. A valuable member of your crew, the ST1000 and ST2000 feature powerful and efficient drives, housed in rugged waterproof enclosures. For larger boats the ST4000T offers below deck pilot features and performance.

All Raymarine Tiller Pilots Feature:

- Easy-to-use controls
- Backlit LCD confirms current and locked heading, plus wind and navigational data when connected to a system
- Autotack
- Auto sea state for efficient, intelligent steering and optimum power conservation
- WindTrim control in WindTrim mode
- Integral fluxgate compass (ST1000 and ST2000 only)

Ordering Information & Fit Guide

Description: ST1000+ Tiller Pilot, for sailing vessels up to 6,600 lbs (3,000 kg)

Part Number: A12004

Description: ST2000+ Tiller Pilot, for sailing vessels up to 10,000 lbs (4,500 kg)

Part Number: A12005

Description: ST4000+ Tiller Pilot, for sailing vessels up to 13,000 lbs (6,000 kg) displacement

Part Number: A12006

Description: ST4000+ Grand Prix Tiller Pilot, for sailing vessels up to 16,500 lbs (7,500 kg) displacement

Part Number: A12007



The ST4000T or the high performance ST4000GP feature a remotely mounted fluxgate compass and ST4000 control head. The ST4000GP is used by the world's top single handed race skippers.



The ST1000 and ST2000 feature an integral fluxgate compass and 6 button controls.

TECH TIP

Remember when determining your vessel displacement always add 20% to the dry weight of your vessel to account for the added weight of fuel, gear, provisions and people.

S1 Wheel Pilot for Sailboats

NEW



- Convenient wheel mounted cockpit autopilot for sailing vessels
- Fully enclosed MkII wheel-drive delivers below deck autopilot performance
- Simple clutch engagement mechanism
- Easy-to-install
- Remotely mounted ST6002 control head

The S1 Wheel Pilot is the successor to the popular ST4000 Plus Wheel drive system. The new S1 system uses the versatile ST6002 control head combined with an S1 SmartPilot course computer for maximum performance.

Fit Guide

For wheel steered sailing vessels up to 18,700lbs (8,500kg) displacement.

Ordering Information

Description: S1 Wheel Pilot

Part Number: E12180

TECH TIP

Remember when determining your vessel displacement always add 20% to the dry weight of your vessel to account for the added weight of fuel, gear, provisions and people.



S1 SportPilot for Powerboats

NEW



The S1 SportPilot is an easy-to-use, easy-to-fit pilot for powerboats with a single station helm. The system consists of an S1 SmartPilot course computer, ST6002 control head and either a fixed or tilt SportDrive helm unit.

- Easy to install cable steering helm with built in autopilot drive motor
- Available in fixed and tilt wheel drive options
- Great for trolling speed applications
- Designed for single helm powerboats

The S1 Wheel Pilot is the successor the popular ST4000 Plus Wheel drive system. The new S1 system uses the versatile ST6002 control head combined with an S1 SmartPilot course computer for maximum performance.

Fit Guide

For manually cable-steered powerboats up to 4,400 lbs or power assisted stern drives up to 7,700 lbs.

Ordering Information

Description: S1 SportPilot (Straight Wheel) Part Number: E12181

Description: S1 SportPilot (Tilt Wheel) Part Number: E12191

S1000 Wireless Autopilot System

No wires, no plugs, the S1000 utilizes the latest in wireless technology for reliable and convenient autopilot control. Everything you need for installation is included in the SmartPilot S1000 box, including fittings, hoses and tools. (For most applications. In some instances, additional fittings, hardware or tools may be required.)

Key features of the S1000 Autopilot system include:

- Smooth course changes regardless of boat speed
- The anglers' copilot with automatic fishing patterns
- Intuitive, menu driven interface
- No rudder reference is required

Fit Guide

For hydraulically steered vessels up to 25 feet in length. The S1000 is designed for hydraulic steering systems with a capacity of 5 to 8 cubic inches (80 to 130 cubic centimeters). Compatible systems include:

- SeaStar steering systems HC5345, HC5347, HC5348 and HC5358
- Teleflex steering systems with HC4600, HC4645, HC4647, HC4648 and HC4658
- BayStar steering rams
- Hynautic K6 steering rams

Ordering Information

Description: S1000 Wireless Autopilot System

Part Number: E12169



S100 Wireless Control



S1000 Hydraulic Pump



S1000 Course Computer

SmartPilot Technology



SeaTalk® networking: The world-renowned on-board plug and play solution for connecting multiple remote autopilot displays and Raymarine integrated navigation systems. SeaTalk enhanced features include:

- Waypoint and route navigation
- Wind Instrument integration: Steer to wind angle – True/Apparent
- Speed Instrument integration: autopilot automatically adjusts the amount of helm based on vessel speed
- Multi station control heads and wireless control options



AutoTack: Tack the boat through a user-programmable turn. Perfect for sailing with a shorthanded crew.



Auto Speed Gain: Adjusts the amount of helm applied at different boat speeds for a smooth safe ride.



AutoSeastate and AutoTrim: Automatically adjusts for wind and sea conditions to hold the best course.



Course Memory: After a manual course change to avoid an obstruction, simply press Auto for one second to return to your previous course.



Vane Mode: Utilizing wind information from SeaTalk wind instruments SmartPilot steers to wind angle and sets the boat up so that the sails are at full trim (balanced).



Wind Trim: 9 levels of adjustability filter out unwanted autopilot movement due to wind gusts, conserving power while maintaining a straighter track.



Clear Displays: Easy-to-read and informative LCD displays with rudder angle indicator and SeaTalk data repeating capabilities.



SmartPilot AST™



Advanced Steering Technology




SmartPilot course computers equipped with a built in rate gyro bring autopilot performance to a new level. The rate gyro enables SmartPilot AST™ software to intelligently monitor the pitch and roll of the vessel and actually anticipate course changes. SmartPilot AST software then produces razor sharp course, keeping without overshoot or instability. This added intelligence is valuable in difficult steering situations, such as downwind with a following sea.

AutoLearn

SmartPilot AST technology and rate gyro equipped SmartPilot course computers enable SmartPilot to AutoLearn your vessel's steering characteristics, simplifying calibration and allowing the autopilot to constantly adapt to changing sea conditions.

Selecting a Below Deck SmartPilot System

SmartPilot System Overview

		
<p>Control Head</p> <p>Each system includes your choice of SmartPilot control heads.</p>	<p>Corepack</p> <p>The central intelligence hub of every SmartPilot. Each corepack consists of the course computer, fluxgate compass and rudder reference unit.</p>	<p>Drive Unit</p> <p>A rugged Raymarine drive unit is matched to your specific vessel requirement.</p>

1 Step 1: Select a Drive Unit

Know your boat and your steering system

The first step in selecting an autopilot from Raymarine is selecting the proper autopilot drive unit for your vessel. Raymarine autopilot drive units are available in array of sizes and configurations to accommodate various steering system types and vessel displacements. To properly select an autopilot you will need to find out what type of steering system is installed. This may involve opening a few hatches and taking a peek at the gear, or this can be a simple as consulting your boat dealer or boat manufacturer.



2 Step 2: Select a Corepack

Once you have determined the appropriate drive unit the next step is to select a SmartPilot Corepack. Corepacks contain the SmartPilot course computers which are available in either standard configuration or "G" versions with built in Rate Gyro sensor and Raymarine AST.



3 Step 3: Select a Control Head

The final step in the building a Raymarine SmartPilot system is selecting an autopilot control head. Here the decision is a matter of personal choice since each fixed mount SmartPilot control head will offer the same level of autopilot performance.



4 Step 4: Select Additional Controls

Choose additional control heads or optional wireless autopilot controls. Adding additional control heads is easy thanks to Raymarine's SeaTalk® networking.

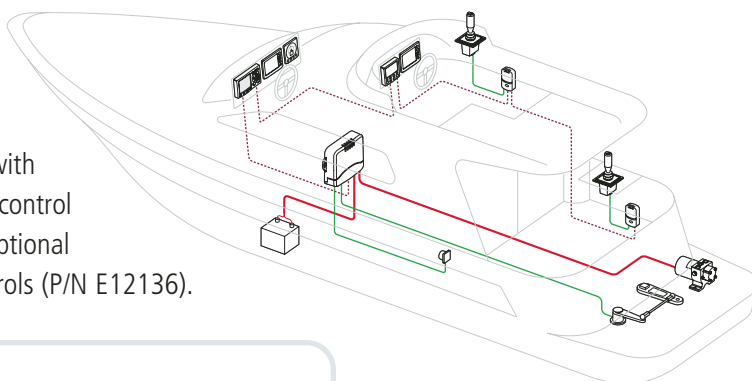


TECH TIP

Raymarine SmartPilot systems accommodate hydraulic, mechanical and power assisted stern drive steering systems. If you are not sure how to determine what type of steering system is installed on your vessel consult an authorized Raymarine dealer. Raymarine dealers are well skilled and factory trained to evaluate and assist you in selecting the right Raymarine autopilot for your boat.

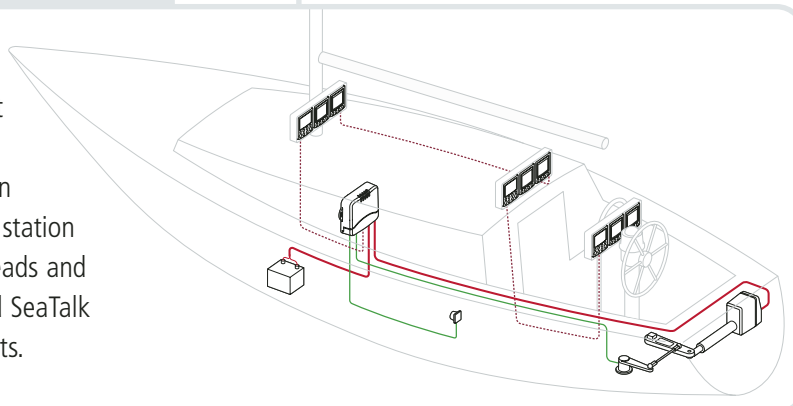
POWER INSTALLATION

Typical SmartPilot Powerboat installation with dual station control heads and optional joystick controls (P/N E12136).



SAIL INSTALLATION

Typical SmartPilot Sailboat installation with dual station control heads and integrated SeaTalk instruments.



Selecting a Drive: Hydraulic Steering Systems

Raymarine SmartPilots connect to hydraulic steering systems using a rugged hydraulic pump matched to the capacity of the vessel's hydraulic steering system. To properly match a Raymarine hydraulic pump to a specific vessel and steering system, the actual size (in cubic inches) of the hydraulic cylinder ram (or rams) needs to be determined. Your steering system documentation will have this information. Alternatively, you can look on the actual cylinder ram itself for the brand and model number. Once you have learned the model number of your cylinder ram(s), visit our website www.raymarine.com to access our hydraulic cylinder ram cross-reference guide to learn which Raymarine hydraulic autopilot pump type is compatible with your hydraulic steering system.



Raymarine autopilot hydraulic pumps are available in several sizes to accommodate a broad range of hydraulic steering cylinder capacities. The table below illustrates the capacity of each type of Raymarine hydraulic autopilot pump when used with the corresponding SmartPilot corepack.

SMARTPILOT HYDRAULIC DRIVE SELECTION CHART

Drive Type	Type 1	Type 1	Type 2	Type 3
Vessel Displacement	<i>Does not apply here. The drive unit is matched to the ram capacity of the steering system</i>			
Ram Capacity	4.9in ³ – 10.5in ³ (80cc – 172cc)	4.9in ³ – 14in ³ (80cc – 230cc)	14in ³ – 21in ³ (230cc – 350cc)	21in ³ – 30.5in ³ (350cc – 500cc)
Maximum Stall Pressure at 12V	750psi (50bar)	750psi (50bar)	1450psi (100bar)	1160psi (80bar)
Peak Flow Rate (no load)	67in ³ /min (1000cc/min)	67in ³ /min (1000cc/min)	122in ³ /min (2000cc/min)	175in ³ /min (2900cc/min)
Corepack Used	S1 or S1G	S2 or S2G	S3 or S3G	S3 or S3G
Part Number	<input type="checkbox"/> M81120 (12 V) <input type="checkbox"/> M81119 (24 V)*	<input type="checkbox"/> M81120 (12 V) <input type="checkbox"/> M81123 (24 V)*	<input type="checkbox"/> M81121 (12 V) <input type="checkbox"/> M81124 (24 V)	<input type="checkbox"/> M81122 (12 V)

* Vessels with 24-volt DC power must use the S3 or S3G corepack and 24-volt drive.

• In some systems with dual steering rams, cylinder capacity is total of the two rams. Visit www.raymarine.com to learn more about selecting a hydraulic drive for dual steering ram systems.

• Vessels with outboard engines require an optional Linear Rudder feedback (Model number M81188).

• Hydraulic steering systems with steering rams over 30.5in³ require our larger constant running hydraulic pumps used in conjunction with our S3 or S3G corepacks. Visit www.raymarine.com for more on selecting a constant running hydraulic pump.

• An authorized Raymarine Dealer is best suited for installing a hydraulic autopilot system.

• For Mercury Verado outboard systems please see page 14.

TECH TIP

Raymarine recommends that you consult a Raymarine approved dealer who can specify, install and commission the correct Raymarine system for your boat. Visit our website www.raymarine.com to locate an authorized Raymarine dealer.

Selecting a Drive: Mechanical Steering Systems

When selecting an autopilot drive unit for a mechanical steering system, the vessel displacement is the determining factor for selecting the properly sized drive. When determining your vessel displacement always add 20% to the dry weight of your vessel to account for the added weight of fuel, gear, provisions and people. Next select the type of autopilot drive that is right for your mechanical steering system. Raymarine SmartPilot drive units for mechanical steering systems are available in linear, hydraulic linear and rotary drive configurations. Below are descriptions of each type of mechanical steering drive.



Linear Drive

MECHANICAL LINEAR DRIVES

Our most common drive type for sailing vessels, Raymarine mechanical linear drives provide powerful thrust, fast hard over times and quiet operation. Mounted below decks, the linear drive moves the rudder directly by pushing the tiller arm or rudder quadrant.

SMARTPILOT LINEAR DRIVE SELECTION CHART

Drive Type	Type 1	Type 1	Type 2 short	Type 2 long
Maximum boat displacement	20,000 lb (9,000 kg)	24,000 lb (11,000 kg)	33,000 lb (15,000 kg)	44,000 lb (20,000 kg)
Corepack Used	S1/S1G	S2/S2G	S3/S3G	S3/S3G
Peak thrust	295 kg (650 lb)	295 kg (650 lb)	480 kg (1,050 lb)	480 kg (1,050 lb)
Maximum stroke	12 in (300 mm)	12 in (300 mm)	12 in (300 mm)	16 in (400 mm)
Hard over to hard over time (+/- 35°, no load)	11 sec	11 sec	11 sec	14 sec
Maximum rudder torque	6,500 lb.in 735 Nm	6,500 lb.in 735 Nm	10,500 lb.in 1,190 Nm	14,700 lb.in 1,660 Nm
Power consumption	18-36 W	18-36 W	48-72 W	48-72 W
Part Number	<input type="checkbox"/> M81130	<input type="checkbox"/> M81130	<input type="checkbox"/> M81131 (12 V) <input type="checkbox"/> M81133 (24 V)	<input type="checkbox"/> M81132 (12 V) <input type="checkbox"/> M81134 (24 V)

- The linear drive unit connects to the rudder stock via an independent tiller arm. Accessory fittings from your steering system manufacturer may be required.
- Vessels with 24 Volt DC power must use the S3 or S3G corepack and a 24-volt drive.
- An authorized Raymarine Dealer is best suited for installing a linear drive system.

HYDRAULIC LINEAR DRIVES

Designed for larger mechanically steered vessels, our hydraulic linear drives are self-contained hydraulic steering systems consisting of a reversing pump, reservoir and hydraulic ram.

- A hydraulic linear drive unit connects to the rudder stock via an independent tiller arm. Accessory fittings from your steering system manufacturer may be required.
- Vessels with 24-volt DC power must use the S3 or S3G corepack and a 24-volt drive.
- An authorized Raymarine dealer is best suited for installing a linear drive system.

SMARTPILOT LINEAR DRIVE SELECTION CHART

Drive Type	Type 2	Type 3
Maximum boat displacement	48,500 lb (22,000 kg)	77,000 lb (35,000 kg)
Corepack Type	S3 or S3G	S3 or S3G
Peak thrust	1,290 lb (585 kg)	2,700 lb (1,200 kg)
Maximum stroke	10 in (254 mm)	12 in (300 mm)
Hard over to hard over time (+/- 35°, no load)	10 sec	12 sec
Maximum rudder torque	11,300 lb.in (1,270 Nm)	28,800 lb.in (3,200 Nm)
Part Number	<input type="checkbox"/> M81200 (12 Volts) <input type="checkbox"/> M81201 (24 Volts)	<input type="checkbox"/> M81202 (12 Volts) <input type="checkbox"/> M81204 (24 Volts)

Selecting a Drive: Mechanical Steering Systems

MECHANICAL ROTARY DRIVES

The rotary drive is designed for power and sailboat steering systems that can be driven from the helm position through a chain and sprocket (for example: cable and rod steering systems). The outstanding design of the Raymarine rotary drive unit provides smooth, powerful autopilot-controlled steering with quiet operation. Use the table below to select a rotary drive suitable for your vessel displacement.

SMARTPILOT ROTARY DRIVE SELECTION CHART

Drive Type	Type 1 Rotary Drive	Type 1 Rotary Drive	Type 2 Rotary Drive
Vessel Displacement	20,000 lb (9,000 kg)	24,000 lb (11,000 kg)	44,000 lb (20,000 kg)
Corepack Type	S1 or S1G	S2 or S2G	S3 or S3G
Peak Output Torque	180 lb.in (20 Nm)	180 lb.in (20 Nm)	300 lb.in (34 Nm)
Max Shaft Speed	33 rpm	33 rpm	33rpm
Recommended hard over time (no load)	10 seconds	10 seconds	10 seconds
Power Consumption	24-48 Watts	24-48 Watts	60-84 Watts
Part Number	<input type="checkbox"/> M81135	<input type="checkbox"/> M81135	<input type="checkbox"/> M81136 (12 V) <input type="checkbox"/> M81137 (24 V)

- Optional drive sprockets and modification to the steering chain may be required.
- Vessels with 24-volt DC power must use the S3 or S3G corepack and a 24-volt drive.
- An authorized Raymarine Dealer is best suited for installing a rotary drive system.



Rotary Drive

Selecting a Drive: Stern Drives

Boats equipped with inboard/outboard engines and power assisted cable steering can take advantage of our universal I/O drive unit. This innovative electromechanical drive unit operates the power steering valve in the same way as the steering cable.

SMARTPILOT UNIVERSAL STERN DRIVE SELECTION CHART

Type	Universal I/O drive
Vessel Displacement	Does not apply
Corepack Type	S1 or S1G
Drive method	Electromechanical
Maximum thrust	50 kg (110 lb)
Maximum stroke	214 mm (8.3 in)
Hard over to hard over time	8.8 sec
Part Number	<input type="checkbox"/> E12026

- Always verify compatibility before installing a drive unit by consulting with an authorized Raymarine dealer or Raymarine's Customer Support Team.
- This drive is not compatible with 1997 or later Mercruiser power assist Inboard/Outboard drives.
- Cable steering systems using non feedback helms are not compatible with this drive.
- Additional stern drive units are available for specific engine configurations. Visit our website www.raymarine.com to learn more.



Universal Stern Drive

Selecting a SmartPilot Corepack

Once you have determined the appropriate Drive Unit, the next step is to select a SmartPilot Corepack. Corepacks contain the SmartPilot course computer, compass and rudder feedback. Each corepack is available in either standard configuration or in a "G" version with a built in rate gyro sensor and Raymarine Advanced Steering Technology (AST). SmartPilot Corepacks are available in three levels of performance (S1, S2 or S3). Based on the type of drive unit your vessel requires, use the chart below to select the appropriate level of SmartPilot Corepack.



S1 & S1G Corepack



S2 & S2G Corepack



S3 & S3G Corepack



SMARTPILOT COREPACK SELECTION CHART

Core Packs	S1	S1G	S2	S2G	S3	S3G
Compatible Drive Types	Type 1	Type 1	Type 1	Type 1	Type 1,2 and 3	Type 1, 2 and 3
Supply voltage	12v	12v	12v	12v	12/24v	12/24v
Motor drive Current – continuous (peak)	6 amps (15 amps peak)	6 amps (15 amps peak)	15 amps (20 amps peak)	15 amps (20 amps peak)	30 amps (40 amps peak)	30 amps (40 amps peak)
Clutch current – Amps	2 amps	2 amps	5 amps	5 amps	5 amps	5 amps
Solenoid drive interface	No	No	No	No	Yes	Yes
Built In Rate Gyro	Upgradeable	Standard	Upgradeable	Standard	Upgradeable	Standard
AST with AutoLearn (Advanced Steering Technology)	Upgradeable	Standard	Upgradeable	Standard	Upgradeable	Standard
Fast Gyro Stabilized heading output for MARPA and radar/ chart overlay on Raymarine Radars	Upgradeable	5Hz	Upgradeable	10Hz	Upgradeable	10Hz
Part Number	<input type="checkbox"/> E12114	<input type="checkbox"/> E12115	<input type="checkbox"/> E12054	<input type="checkbox"/> E12091	<input type="checkbox"/> E12055	<input type="checkbox"/> E12092

Select a SmartPilot Control Head



Flush Mount



Surface Mount

The final step in the building a Raymarine SmartPilot system is selecting an autopilot control head. The decision is a matter of personal choice since each fixed mount SmartPilot control head will offer the same level of autopilot performance. Adding additional control heads is easy thanks to Raymarine's SeaTalk® networking.

ST6002, ST7002 and ST8002 Control Head Features:

- New industrial design that cosmetically matches ST60 Plus instruments, C-Series and E-Series
- Available in surface mount or low profile flush mount
- High contrast easy-to-read displays
- Rugged waterproof enclosures
- Easy installation with a single SeaTalk® cable between the control head and SmartPilot course computer
- Easy addition of multiple remote ST6002, ST7002 and ST8002 control heads handheld remote
- SeaTalk® networking and NMEA 0183 compatibility via SmartPilot course computer
- Customizable navigation and instrument repeater data pages



SMARTPILOT AUTOPILOT CONTROL HEAD SELECTION CHART

Control Heads	ST6002	ST7002	ST8002
Description	The 6000 series control heads have become the benchmark for autopilot performance and styling and are installed aboard more sail and motor yachts than any other inboard pilot. The ST6002 features new styling to match the ST60 Plus instrument line.	A powerful and versatile extra large control unit, the ST7002 is really simple to use. Its large informative display and intuitive keypad give you quick and easy access to all pilot data. Ideal for longer passages, the response function controls how the pilot helms the boat, ensuring the most comfortable ride at all times while keeping you right on course.	The all-new ST8002 puts total helm control at your fingertips with an easy-to-use rotary control for precision course changes and convenient power steering control. The oversized LCD display delivers large high contrast characters of pilot status, compass heading and user defined data pages.
Pilot Control Type	Push Button	Push Button	Rotary Knob
LCD size	3" (81mm)	4" (98mm)	4" (98mm)
Customizable SeaTalk data pages for repeating instrument and GPS data	15	15	15
Power Steer Mode			•
AST and AutoLearn (with G Type Corepack)	•	•	•
Optional second or multi station control heads	•	•	•
Part Number (Surface mount)	<input type="checkbox"/> E12098-P	<input type="checkbox"/> E12099-P	<input type="checkbox"/> E12119-P
Part Number (Flush mount)	<input type="checkbox"/> E12100-P	<input type="checkbox"/> E12182	<input type="checkbox"/> E12183

Wireless Controllers

S100 Wireless SeaTalk autopilot remote control

Compact and lightweight, the S100 remote delivers the freedom of wireless control to any Raymarine SeaTalk® autopilot. The bright display is easy to read with two lines of text and a graphical autopilot mode indicator. The 5 button ergonomic keypad and intuitive menu structure provides simple operation and easy access to extended features. Rugged and waterproof, the S100 fits in your pocket or clips to your belt, keeping full function autopilot control always within reach.

S100 Features:

- Two line display with a graphical autopilot status indicator
- Crisp, high contrast 24 x 127 dot matrix backlit display
- Raised profile on Standby button for easy identification in the dark
- Convenient, replaceable AAA alkaline batteries

Ordering Information

Description: S100 Wireless Autopilot Control

Part Number: E15024



SmartController Wireless SeaTalk autopilot and instrument remote control

Take control of your Raymarine SeaTalk® network with the powerful SmartController wireless handheld remote. Set a new course to steer or monitor vital instrument and navigation data in the palm of your hand. Big on features, the waterproof SmartController is lightweight and compact for easy handling.

The SmartController features a rechargeable battery that provides up to two weeks of operation on a single charge! The convenient mounting cradle simply connects to any SeaTalk® network and automatically recharges the batteries from the SeaTalk® network power supply.

SmartController Features:

- Backlit display and keypad
- Up to eight user definable data pages
- Single, dual or four line data displays
- Graphical CDI (Course Deviation Indicator) display
- Rechargeable via SeaTalk® network

Fit Guide

Upgrading your autopilot to wireless is fast and easy thanks to SeaTalk® networking. Simply connect the wireless base station into your existing SeaTalk® network, and you're done!

Ordering Information

Description: SmartController Wireless Autopilot Control

Part Number: E15023



SmartPilot IPS

Designed to integrate with the innovative Volvo Penta IPS propulsion system, the Raymarine SmartPilot IPS represents the convergence of autopilot and propulsion technology. Employing Raymarine's proven AST (Advanced Steering Technology), the SmartPilot IPS delivers razor sharp course keeping and smooth course turns in conjunction with the Volvo IPS 'steer by wire' propulsion system. CAN Bus communication protocol provides the SmartPilot IPS with a single cable interface to Volvo IPS drives. Raymarine's proven SeaTalk technology provides captains their choice of multiple SmartPilot control heads as well as seamless integration with Raymarine's multifunction displays and instrument systems.

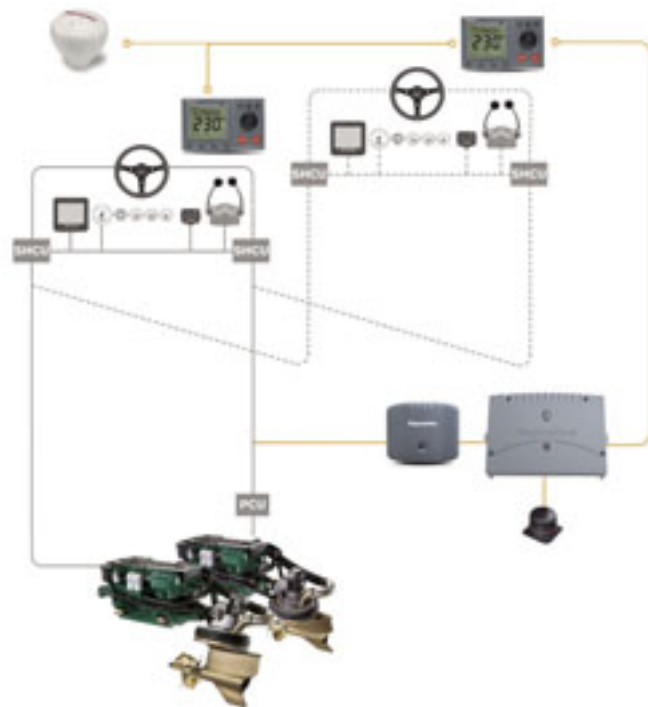
Features:

- Steer-By-Wire Technology
- Simplified CAN Bus Autopilot Interface
- Advanced Steering Technology (SmartPilot AST)
- Compatible with all Raymarine SmartPilot control heads

Ordering Information

Description: SmartPilot IPS Corepack

Part Number: T12179



SmartPilot for Verado

Autopilot system for single and twin Mercury Verado outboard engines.*

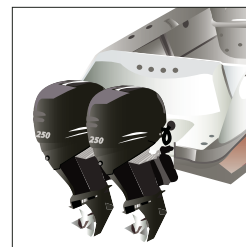
Features:

- Complete autopilot system in one box
- Control Head
- S1G course computer for Verado
- Fluxgate compass
- Hydraulic pump and hoses for Verado
- No rudder reference required
- SmartPilot AST (Advanced Steering Technology)
- Built-in Rate Gyro Sensor
- AutoLearn software automatically learns your boat's handling characteristics for optimal steering control

Ordering Information

Description: SmartPilot for Verado Outboards System Pack

Part Number: E12184



* Not suitable for parallel cylinder applications. Consult with your Raymarine dealer or visit www.raymarine.com for complete compatibility information.

SmartPilot S1 System Packs



All in one box SmartPilot S1 solutions. Each kit is complete with S1 or S1G corepack, ST6002 or ST8002 control head and drive unit.

S1 INBOARD HYDRAULIC SYSTEMS

For hydraulic steering systems with cylinder ram capacities between 4.9in ³ – 10.5in ³ (80cc – 172cc)	Part Number
S1 Hydraulic type 1 inboard (rotary rudder feedback unit) with ST6002 control head	<input type="checkbox"/> E12106
S1G Hydraulic type 1 inboard (rotary rudder feedback unit) with ST6002 control head	<input type="checkbox"/> E12120
S1 Hydraulic type 1 inboard (rotary rudder feedback unit) with ST8002 control head	<input type="checkbox"/> E12116
S1G Hydraulic type 1 inboard (rotary rudder feedback unit) with ST8002 control head	<input type="checkbox"/> E12121



ST6002 or ST8002 Displays



S1 or S1G Course Computer



Fluxgate compass, Hydraulic Drive and Rudder Reference

S1 OUTBOARD HYDRAULIC SYSTEMS

For hydraulic steering systems with cylinder ram capacities between 4.9in ³ – 10.5in ³ (80cc – 172cc)	Part Number
S1 Hydraulic type 1 outboard (linear rudder feedback unit) with ST6002 control head	<input type="checkbox"/> E12107
S1G Hydraulic type 1 outboard (linear rudder feedback unit) with ST6002 control head	<input type="checkbox"/> E12122
S1 Hydraulic type 1 outboard (linear rudder feedback unit) with ST8002 control head	<input type="checkbox"/> E12117
S1G Hydraulic type 1 outboard (linear rudder feedback unit) with ST8002 control head	<input type="checkbox"/> E12123



ST6002 or ST8002 Displays



S1 or S1G Course Computer



Fluxgate compass, Hydraulic Drive and Linear rudder feedback unit,

S1 SAILPILOT MECHANICAL LINEAR DRIVE SYSTEMS

For use with mechanically steered vessels under 20,000 lbs (9000 kg)	Part Number
S1 Linear drive with ST8002 control head	<input type="checkbox"/> E12118
S1G Linear drive with ST8002 control head	<input type="checkbox"/> E12125
S1 Linear drive with ST6002 control head	<input type="checkbox"/> E12108
S1G Linear drive with ST6002 control head	<input type="checkbox"/> E12124



ST6002 or ST8002 Displays

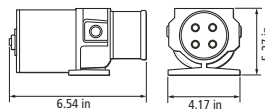


Fluxgate compass, Linear Drive and Rudder Reference

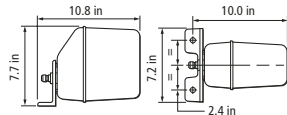


S1 or S1G Course Computer

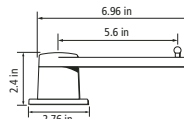
Component Dimensions



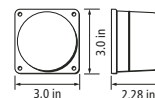
TYPE 1, 2 AND 3 HYDRAULIC
PUMP DIMENSIONS



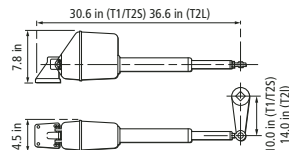
TYPE 1 AND 2
ROTARY DRIVE DIMENSIONS



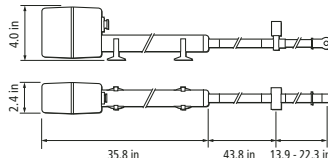
RUDDER REFERENCE
DIMENSIONS



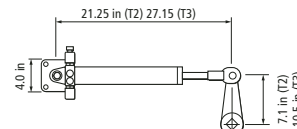
FLUXGATE COMPASS
DIMENSIONS



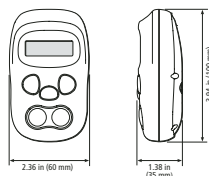
TYPE 1 AND 2 LINEAR DRIVE DIMENSIONS



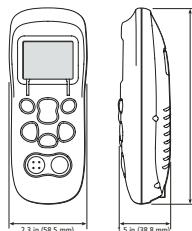
UNIVERSAL STERNDRIVE DIMENSIONS



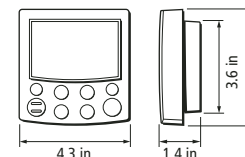
TYPE 2 AND 3 HYDRAULIC LINEAR DIMENSIONS



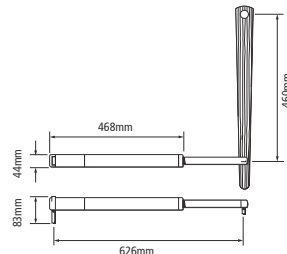
S100 CONTROLLER DIMENSIONS



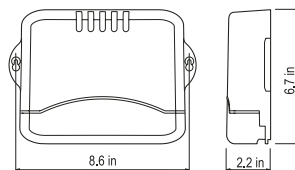
SMARTCONTROLLER DIMENSIONS



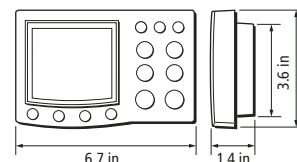
ST6002 CONTROL DIMENSIONS



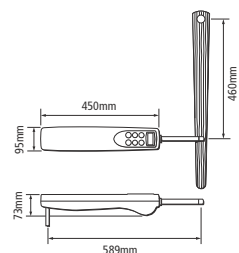
ST4000 TILLER PILOT DIMENSIONS



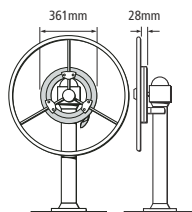
S1 AND S1G COURSE COMPUTERS DIMENSIONS



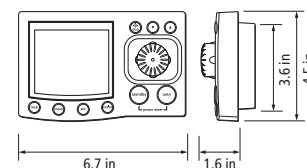
ST7002 CONTROL UNIT DIMENSIONS



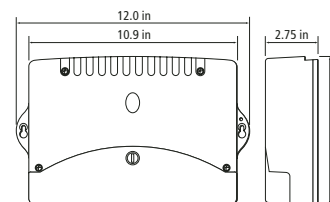
ST1000 AND ST2000
TILLER PILOT DIMENSIONS



S1 WHEEL PILOT DIMENSIONS



ST8002 CONTROL UNIT DIMENSIONS



S2, S2G, S3 AND S3G COURSE
COMPUTERS DIMENSIONS

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Product specifications subject to change without notice.